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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 2133.089USU

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on October 14, 2009

Signature: Ruth J. Olivo

Typed or printed name: Ruth J. Olivo

Application Number	Filed
10/537,752	December 5, 2005

First Named Inventor: Leister et al.

Art Unit	Examiner
1791	John Hoffmann

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☐ attorney or agent of record. Registration number _____
- ☑ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34: 44,927

Signature

Edward L. McMahon
Typed or printed name

(203) 327-4500
Telephone number

October 14, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants(s):	Leister et al.
Serial No. :	10/537,752
For:	PROCESS FOR PRODUCING BOROSILICATE GLASSES, BORATE GLASSES AND CRYSTALLIZING BORON-CONTAINING MATERIALS
Filed:	December 5,2005
Examiner:	John H. Hoffmann
Art Unit:	1791
Confirmation No. :	5178
Customer No. :	27,623

Attorney Docket No.: 2133.089USU

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In response to the Final Office Action dated July 14, 2009, Appellants respectfully file herewith a Notice of Appeal and requests review of the present application before filing an appeal brief.

Status of the Claims

Claims 1-5, 8-22, and 28-37 are pending in the present application. Claim 1 is independent. Claims 10, 12, and 20-21 have been withdrawn, but remain pending for rejoinder upon allowance of any of generic claims 1-8, 11, and 14-18.

Independent claim 1 stands finally rejected under 35 U.S.C. §103(a) over Appellants' own International Publication No. WO/2001/53222 to Kunert et al. (Kunert)

in view of each of U.S. Patent No. 6,713,419 to Onozawa et al. (Onozawa), U.S. Patent No. 3,193,400 to Geffcken (Geffcken), U.S. Patent No. 5,648,302 to Brow et al. (Brow), U.S. Patent No. 4,358,544 to Skedgell (Skedgell), or U.S. Patent No. 3,963,505 to Dumesnil (Dumesnil).

Clear Errors for Review

(i) Failure to prove *prima facie* case of obviousness

The Advisory Action asserts that the level of skill in the art is readily evident from the applied art and the cited case law and asserts that there is no requirement that the Office set forth the level of skill when such is clear and where applicant has not shown (or suggested how) the lack of stating such does (or could possibly) have any effect on the finding of obviousness in the present application. See page 4, line 16 through page 5, line 2.

Appellants content that such an assertion finds no basis in law. It is well settled that the question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 550 U.S. at 407.

Without such an underlying factual determination, it is impossible for the question of obviousness to be determined. Furthermore, and contrary to the assertion made by the Office Action, the burden is entirely on the Office to provide these underlying factual determinations. Thus, Appellants maintain that the Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness because the Office Action has failed to determine the level of skill in the art.

(ii) Cited art fails to render claim 1 obvious

Appellants claim a "process for producing a borate-containing, low-alkali material" that includes the step of "induction-heating a boron-containing melting material" where that material has "a $B_2O_3/(B_2O_3 + SiO_2)$ ratio of greater than or equal to 0.5" and the skull crucible in which this melting step occurs has walls that comprise "a spacing of between 2 mm and 4 mm" between its tubes.

As disclosed in the present application at least at page 11, line 13 through page 13, line 6, the claimed "spacing" has been determined by the present application to balance two parameters when producing glass in a skull crucible from "boron-containing melting material", which as an extremely low viscosity at the melting temperature.

On the one hand, the extremely low viscosity material results in the formation of a very thin skull layer on the cooling tubes. The very thin skull layer is unable to support its own weight, resulting in melt breaking through the skull layer. In order to avoid this, the present application has determined that the spacing between the tubes should be minimized. On the other hand, there is an increased risk of flashovers when the spacing between the tubes has been minimized. The present application has advantageously determined that the claimed "spacing of between 2 mm and 4 mm" between the tubes balances these two parameters.

While Kunert may disclose that "[S]lits 14 remain between pipes 12 that are adjacent to each other", Appellants maintain that Kunert, alone or in combination with the cited art, simply fails to disclose or suggest the spacing caused by these slits when used in connection with boron-containing melting material as claimed.

The Office Action asserts that it would have been obvious to have the spacing as large or as small as needed. Appellants disagree. Rather, Appellants maintain that it would not have been obvious to one skilled in the art, when viewing the "slit" disclosure of Kunert to have the "spacing of between 2mm and 4mm" when melting the "boron-containing melting material" as recited by claim 1.

Appellants maintain that the present application has determined the optical spacing of the tubes within skull crucibles when used with extremely low viscosity melts to ensure that the thin skull layer that forms on these tubes does not break and do not flashover, which is simply not disclosed or suggested by the cited art.

The Office Action asserts that that Appellants "appear[s] to be suggesting that just because viscosity is disclosed as affecting the spacing, it is the only relevant variable". In making this assertion, the Office Action states that an engineer would understand that since one is concerned with the weight of the melt, the height of the crucible matters and that if the height is doubled then the pressure at the base of the melt doubles, which would require an increase in the thickness of the crucible.

Unfortunately, the Office Action fails to recognize that increasing the thickness of the crucible has nothing to do with the spacing between the crucible cooling tubes. To the contrary, the spacing between the tubes is independent of the size of the crucible.

Again, Appellants have determined the optimal spacing of the tubes when melting the "boron-containing melting material" that has a particular high content of B_2O_3 as compared to SiO_2, as evidenced by the claimed $B_2O_3/(B_2O_3 + SiO_2)$ ratio, which results in an extremely low viscosity at the melting temperature.

The Office Action asserts that the spacing of "2-4mm does not seem that critical" and bases this conclusion on a misunderstanding of the present application.

The Office Action has correctly stated that the present application discloses "[[A]] space amounting to 5 mm or less may be selected in particular for high-melting, high-viscosity melts (emphasis added)". See page 12, lines 14-15.

However, the present application has determined that the spacing of 5mm, which works for high-viscosity melts, fails when used with boron-containing melting materials

as claimed, which have an extremely low viscosity, rendering the spacing of 2-4mm critical.

Thus, Appellants submit that the Office Action's conclusion that, when viewed in light of the 5mm value for high-viscosity melts, the claimed spacing of 2mm to 4mm would be read by one skilled in the art as being not critical is clearly erroneous.

The Office Action fails to assert that any of the remaining references, namely Onozawa, Romer, Geffcken, Brow, Skedgell, or Dumesnil, cure the deficiencies noted above in Kunert. Accordingly, Appellants submit that the Office Action has failed to establish a *prima facie* case of obviousness and has failed to establish that the cited art discloses or suggests the "spacing" recited by claim 1.

In view of the above, it is respectfully submitted that the final rejection is clearly erroneous and, as such, the present application is in condition for allowance.

Reconsideration and withdrawal of the rejection to claims 1-5, 8-22, and 28-37 and passage of the present application, including withdrawn claims 10, 12, and 20-21, to issuance are respectfully requested. Such action is solicited.

Respectfully submitted,

October 14, 2009

Edward L. McMahon
Reg. No. 44,927
Attorney for Appellant(s)
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th floor
Stamford, CT 06901-2682
Phone 203-327-4500